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Original Article

Clinical characteristics and outcomes of patients undergoing percutaneous coronary intervention at Gesund Cardiac and Medical Center, Addis Ababa, Ethiopia, 2024

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Abstract: Introduction: Percutaneous coronary intervention (PCI) is a critical procedure for improving blood flow by alleviating arterial blockage. However, its availability in Ethiopia is limited because of insufficient resources, staff, and infrastructure. Objective: To evaluate the clinical characteristics and outcomes of patients who underwent percutaneous coronary intervention at Gesund Cardiac and Medical Center in Addis Ababa, Ethiopia, in 2024. Methods: This retrospective observational chart review included 224 patients who underwent percutaneous coronary intervention. Data were collected using a standardized checklist, imported into EPI information v7, and analyzed using SPSS v26. A binary logistic regression model was used to identify factors associated with percutaneous coronary intervention. Results: The study found that most participants (n = 186, 83%) were male, with a mean age of 57.82 ± 11.5 years. Diabetes mellitus was prevalent among participants (n = 135, 60.3%), followed by hypertension (n = 127, 56.7%). A notable portion (n = 31, 13.8%) had previously undergone percutaneous coronary intervention. Most patients presented with typical chest pain, with ST-Elevation Myocardial Infarction (STEMI) being the primary indication for percutaneous coronary intervention. Post-procedure complications includes significant bleeding (n = 6, 2.6%), myocardial infarction (n = 20, 8.9%), death (n = 2, 0.9%), transfer to another hospital (n = 12, 5.4%), and acute kidney injury (n = 16, 7.14%). The use of bare metal stents was significantly associated with transfer to other hospitals (AOR = 5; 95% CI = 1.69-10.29). Male gender (AOR = 0.09; 95% CI = 0.03-0.34) and a history of myocardial infarction (AOR = 10; 95% CI = 2.31-13.31) were linked to an increased risk of post-percutaneous coronary intervention death. Conclusion and Recommendations: Our findings suggest that coronary artery stenosis (CAS) is more prevalent in older individuals and men. Chronic illnesses often coexist with coronary artery stenosis, thereby complicating the prognosis. Interestingly, men exhibited a lower risk of unfavorable outcomes compared to women. Adherence to procedural guidelines and effective management techniques are essential for improving patient outcomes following percutaneous coronary intervention.

Keywords: Clinical characteristics, outcomes, percutaneous coronary intervention

Introduction

Percutaneous coronary intervention (PCI) is a minimally invasive, nonsurgical procedure designed to alleviate coronary artery obstruction or stenosis, thereby enhancing blood flow to ischemic myocardial tissue. This intervention is typically performed by inflating a balloon within the narrowed segment of the artery and subsequently implanting a stent to maintain arterial patency [1, 2].

Globally, there are notable regional disparities in the implementation and outcomes of PCI, particularly in the management of acute coronary syndromes (ACS) [3]. The use of PCI, a

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widely accepted treatment for coronary artery disease (CAD), varies significantly across various geographic regions [4].

Currently, low- and middle-income countries, including those in Africa, account for 80% of the global mortality and cardiovascular disease burden [5]. As the incidence of ACS increases in sub-Saharan Africa, the establishment of primary PCI remains problematic [6]. Access to cardiac facilities capable of performing PCI is limited, and catheterization laboratories equipped with standardized operating procedures and proficient interventional cardiologists are scarce in this region [7, 8]. Patients in Africa with CAD require PCI as a crucial intervention, as it facilitates access to quality healthcare, improves blood flow, reduces morbidity and mortality, and can be safely performed within 48 hours following symptom onset. PCI is a vital component of CAD management in Africa, as it is generally more cost-effective than more invasive surgical alternatives [9].

A comprehensive review and meta-analysis conducted in Ethiopia identified hypertension (54%) and diabetes mellitus (38.5%) as the two predominant risk factors for ACS, with the majority of patients (59%) presenting with ST-segment elevation myocardial infarction (STEMI) [10, 11]. Significant regional variations have been observed in Ethiopia concerning the application and outcomes of PCI [11]. These disparities encompass the prevalence of risk factors such as diabetes, hypertension, dyslipidemia, and obesity among individuals with confirmed CAD [12]. Additionally, multivessel CAD in Ethiopia is closely associated with dyslipidemia and left ventricular hypertrophy [13].

The following studies can provide information about the clinical characteristics of patients treated with percutaneous coronary intervention (PCI). A study conducted in Yemen involving 250 patients reported a mean age of 57 years, with 84% of the participants being male. Key risk factors included smoking (61.6%), hypertension (56%), and diabetes mellitus (37%). The indications for PCI were as follows: acute ST-elevation myocardial infarction (STEMI) (41% of cases), non-STEMI (5.2%), stable angina (31%), and unstable angina (5.2%). Most procedures were elective (81%), whereas emergency and urgent cases accounted for 11% and 8%, respectively. Access was predominantly via the femoral artery (97%) [14].

The Japanese Nationwide PCI (J-PCI) Registry reported that the mean age of patients undergoing PCI was 71 years, with a significant proportion exhibiting risk factors such as dyslipidemia and chronic kidney disease. The registry noted trends in clinical presentations, highlighting that 37.6% of patients underwent PCI for acute coronary syndrome, including both STEMI and non-STEMI [15]. Another study focused on high-risk PCI patients requiring prolonged mechanical circulatory support and found that demographic characteristics were similar across groups, with a notable representation of Black patients (17.9%) compared with White patients (59.5%). The current study emphasizes the diversity of patient profiles undergoing PCI and the various clinical contexts [16].

Despite the clinical importance of understanding the characteristics and outcomes of patients undergoing percutaneous coronary intervention (PCI), this area remains underexplored, particularly in low-income countries, such as Ethiopia. Therefore, this study aimed to assess the clinical characteristics and outcomes of patients who underwent PCI at Gesund Cardiac and Medical Center, a private cardiac facility in Addis Ababa, Ethiopia. The significance of this study lies in its potential to address existing research gaps and provide valuable data specific to the study setting, as well as insights applicable to low-income countries in general. By elucidating the factors influencing the outcomes of PCI for cardiovascular disease - such as PCI protocols, procedural standards, material availability, professional capacity, and appropriate indications. This research may facilitate interventions to enhance PCI treatment outcomes. Furthermore, this study is crucial for informing stakeholders, including hospital administrators, the Ministry of Health, and private healthcare providers. Percutaneous coronary intervention (PCI) is a minimally invasive procedure primarily used to treat coronary artery disease (CAD) by relieving blockages in the coronary arteries. The indications for PCI are categorized into acute and chronic conditions. In acute cases, such as ST-elevation myocardial infarction (STEMI), PCI is the preferred treatment when performed within 12 h of symptom onset, ideally within 90 minutes, to

limit myocardial damage. Patients with unstable angina who experience recurrent symptoms despite treatment may also require PCI. For chronic conditions, elective PCI is indicated for stable angina that is unresponsive to optimal medical therapy and for patients exhibiting significant ischemic symptoms or high-risk findings on stress tests. Specific scenarios include recurrent angina following myocardial infarction and critical stenosis (greater than 50%) in the coronary arteries when surgical options are unsuitable. High-risk patients, such as those with diabetes or renal dysfunction, may also be considered for PCI to mitigate the associated risks [17-19].

Methods and materials

Study area and period

This study was conducted at Gesund Cardiac and Medical Center, a private cardiac facility located in Addis Ababa, Ethiopia, which is equipped with a state-of-the-art catheterization laboratory (Cath-Lab). The center was established as a cardiac and medical facility with 80 staff members, 50 of them are health care professionals. Specifically, it focuses on managing cardiac patients and provides various cardiac services to Ethiopia's populations, Eritrea, Somalia, and Djibouti [20].

Study design

A retrospective observational chart review study design was used.

Source of population

The study population was comprised of all patients who presented with coronary artery disease at Gesund Cardiac and Medical Center, Addis Ababa, Ethiopia.

Study population

The study population included all patients who underwent percutaneous coronary intervention (PCI) between January 2021 to January 2024.

Inclusion and exclusion criteria

Inclusion Criteria: Patient History: Participants must have undergone PCI within the past 3 years, specifically between January 1, 2021 to January 1, 2024. This timeframe ensured that the study focused on recent interventions, allowing for evaluating outcomes and complications associated with contemporary PCI techniques and practices.

Exclusion Criteria: 1. Incomplete Chart Records: Patients with incomplete medical records will be excluded from the study. This criterion is essential to ensure that all relevant clinical data are available for accurate analysis, as incomplete records may hinder the assessment of patient outcomes and the effectiveness of PCI. 2. Discharged Against Medical Advice: Patients who were discharged against medical advice will also be excluded. This exclusion is critical because such decisions may indicate underlying issues with patient compliance or understanding their condition, potentially skewing the results regarding the efficacy of PCI interventions.

Sample size determination

The sample size was determined using the single population proportion formula, with a proportion (P) of 50% assumed due to the lack of similar previous studies in the area. The formula used was $= \frac{(Z\alpha/2)^2 p(1-p)}{d^2}$, where: n = the required sample size, Zα/2 = 95% confidence interval (level of significance) (1.96). Because the patient charts were derived from a population of 10,000, an adjusted correction population formula was used $= \frac{n_0}{(1+\frac{n_0}{N})}$, where: n_f = the final sample size or estimated study population, n_0 = after adding 5% contingency for incomplete charts, the final sample size was 224.

Sampling technique and procedure

First, all patients with coronary artery disease who underwent percutaneous coronary intervention (PCI) at Gesund Cardiac and Medical Center were identified. The sample was then selected from each patient's medical record using a simple random sampling technique. The sampling interval (kth) was determined by dividing the total number of patients with coronary artery disease attending Gesund Cardiac and Medical Center by the number of those who underwent PCI. The first clinical record was chosen through simple random sampling approximately every two-study unit was selected for data collection until the required sample size was obtained.

Outcomes measured [1, 2, 4, 10, 21, 22]

This study measured the outcomes of percutaneous coronary intervention (PCI) according to the following events:

Death: This outcome was extracted directly from the patients' chart records.

Myocardial Infarction (MI): This outcome was also extracted directly from the patients' chart records.

Major Bleeding: This outcome was obtained from the patients' charts and classified as major bleeding if at least one of the following conditions related to PCI was present: Transfusion of at least 2 units of packed erythrocytes due to bleeding. Intracranial bleeding: Bleeding leading to a hemoglobin decrease of 4 g/dL. Bleeding caused a critical drop in blood pressure that required intervention. Bleeding requiring surgical intervention or causing significant morbidity.

Procedural Success in Restoring Normal Blood Flow: Patients were classified based on their Thrombolysis in Myocardial Infarction (TIMI) flow grade, with TIMI 3 indicating successful restoration of normal blood flow and TIMI 0, 1, and 2 indicating less than normal flow.

TIMI-flow grading system

The TIMI grading system evaluates blood flow levels using a standardized approach that assesses coronary reperfusion through angiographic imaging. The TIMI flow grades were categorized as follows: Grade 0: No perfusion, indicating no antegrade flow beyond the occlusion point. Grade 1: Penetration without perfusion, in which contrast material passes beyond the obstruction but fails to opacify the entire coronary bed distal to the obstruction. Grade 2: Partial perfusion, in which contrast material passes across the obstruction and opacifies the artery distal to it, but the rate of entry of contrast is slower than normal. Grade 3: Complete perfusion, where antegrade flow into the distal bed occurs promptly and contrast material clearance is similar to that in an uninvolved artery.

This grading system provides a categorical assessment of epicardial blood flow, which is crucial for determining the effectiveness of interventions like PCI. Additionally, the TIMI frame count (TFC) can be utilized to quantify the number of cineangiographic frames required for contrast to reach standardized distal landmarks, thereby enhancing the reproducibility of assessments. The TIMI myocardial perfusion (TMP) grade further evaluates microvascular perfusion using myocardial contrast echocardiography, providing a comprehensive view of myocardial blood flow following reperfusion therapy [23, 24].

Contrast-induced nephropathy: This outcome was obtained directly from the patients' charts.

Data collection tools

A structured checklist was developed using various sources, such as the Cardiology Audit and Registration Data Standards (PCI data standards) and previous studies [12]. The checklist was adapted and amended according to the study variables and objectives, with input from an interventional cardiologist. The checklist included questions related to demographic and clinical characteristics, procedural details, and short-term outcomes after PCI.

Data quality assurance

Data collectors, facilitators, and supervisors received training before data collection. At the beginning of data collection, a detailed description of the study's goals and objectives was provided to the data collectors. The primary investigator conducted rigorous follow-ups throughout the data collection period. Data collectors checked the completeness, clarity, consistency, and accuracy of the information from each patient's medical record.

Data analysis and management

The data were then exported to the Statistical Package for Social Sciences (SPSS) version 26 for analysis. Basic descriptive statistics, including frequency tables, means, standard deviations, ranges, and cross-tabulations, were computed. Binary logistic regression models were used to identify factors associated with outcome variables (death and survival), expressed as odds ratios (OR) with 95% confidence intervals (CI). *P*-values less than 0.05 were considered statistically significant.

Table 1. Socio-demographic and other health-related factors of respondents

Serial Number	Variables	Frequency	Percentage (%)
1	Sex		
	Male	186	83.0
	Female	38	17.0
2	Age		
	<35	5	2.2
	36-45	25	11.0
	46-55	64	28.8
	56-65	86	38.4
	66-75	27	12.0
	76-85	15	6.7
	86-95	2	0.9
3	BMI		
	<18.5	6	2.7
	18.5-24.9	100	44.6
	25-29.9	87	38.8
	>30	31	13.8
4	Residency		
	Urban	151	67.4
	Rural	68	30.3
	Outside Ethiopia	5	2.2
5	Hospital Transfer		
	Yes	137	61.2
	No	87	38.8

Note: BMI: Body Mass Index.

Results

Socio-demographic characteristics of study participants

In total, 224 patient charts of individuals who underwent percutaneous coronary intervention (PCI) were reviewed. The mean age of the participants was 58 years (± 11), ranging from 29 to 90 years. The majority of participants were between 56 and 65 years (n = 86, 38.4%). Only 2 participants (0.9%) were older than 80 years, while 5 participants (2.2%) were younger than 35. Most participants were male (n = 187, 83%) and resided in urban areas (n = 151, 67%) (**Table 1**).

Previous medical history of participants before percutaneous coronary intervention

Regarding previous medical history, ischemic heart disease was the most common condition among participants (n = 94, 42.0%). Approximately 31 patients (13.8%) had a history of prior PCI. The medical charts indicated several chronic illnesses, including hypertension (n = 127, 56.7%) and diabetes mellitus (n = 135, 60.3%) (Supplementary Table 1).

Clinical characteristics, laboratory findings, and interventions of participants

Troponin was the most frequently detected biochemical marker in 180 patients (84.9%). More than half of the patients (55.8%) underwent intervention due to ST-segment elevation myocardial infarction (STEMI). Among all patients who visited the medical center, most reported typical chest pain (n = 204, 91.1%) and fatigue (n = 181, 80.0%) (Supplementary Table 2).

Coronary artery blockage, stenosis severity, and lesions

The left main coronary artery accounted for most blocked arteries (174 cases (44.9%)). In terms of lesion types observed in the participants, type A lesions were the most common, accounting for 144 cases (64.3%) (Supplementary Table 3).

Types of procedures for study participants

Stents were implanted through the femoral artery during PCI in all 224 patients. Among the stents used, drug-eluting stents were the most frequently used (n = 219, 97.8%). Revascularization of the vessel was accomplished using a single stent technique in most patients (n = 140, 62.5%). All patients received aspirin, and 222 patients (99.1%) were prescribed the antiplatelet medication clopidogrel. An anticoagulant was administered to eight individuals (3.6%) (Supplementary Table 4).

Periprocedural complications among participants

During the procedure, multiple complications occurred; left ventricular apical thrombosis was the most common complication reported (n = 15, 6.7%), followed by no/slow flow phenomena (n = 13, 5.8%) (Supplementary Table 5).

Medication consumption during discharge

Upon discharge, patients were prescribed medications, including aspirin, beta-blockers, and

Table 2. Outcomes of the percutaneous coronary intervention

Serial number	Variables	Frequency	Percent (%)
1	MI		
	Yes	20	8.9
	No	204	91.1
2	Bleeding		
	No	218	97.3
	Retroperitoneal	3	1.3
	Other bleeding	3	1.3
3	TIMI Flow Grade After PCI		
	TIMI 0	1	0.4
	TIMI 2	4	1.8
	TIMI 3	219	97.8
4	Participants Survival Outcome		
	Alive	222	99.1
	Dead	2	0.9
5	Discharge Destination		
	Home	212	94.6
	Transfer to Other Hospital	12	5.4
6	Acute Kidney Injury		
	Yes	16	7.14
	No	208	92.8

Note: MI: Myocardial Infarction.

statins, which were the most commonly used medications for 220 patients (98.2%), 207 patients (92.4%), and 212 patients (94.5%), respectively (Supplementary Table 6).

Outcomes of the study participants after the intervention

Approximately 8.9% of patients (n = 20) developed myocardial infarction (MI) following PCI, whereas 2.6% experienced bleeding. After successful intervention, TIMI 3 flow grade was observed in most patients (n = 219, 97.8%). Nearly all patients (n = 222, 99.1%) remained alive upon discharge; however, 12 required transfer to another hospital for further assessment and care (**Table 2**).

Factors associated with the outcomes of percutaneous intervention

Multivariate logistic regression analysis revealed that the outcome of death was significantly correlated with several variables at P<0.05. Males were 90% less likely to experience death after the PCI procedure (AOR = 0.095; 95% CI (0.03, 0.34)). The odds of patients with a previous history of MI experiencing death were 10 times higher than those without such a history (AOR = 10.0; 95% CI (2.31, 43.31)). Regarding the types of stents used in PCI, patients treated with bare metal stents had a fivefold increase in mortality compared with their counterparts (AOR = 54; 95% CI (17.69, 108.3)) (**Table 3**).

Discussion

The current study reported that approximately 8.9% of patients experienced myocardial infarction (MI) following PCI, which is consistent with similar findings from a study conducted in New York [25]. The incidence of major bleeding was noted to be 2.6%, significantly lower than the rates reported in Sri Lanka [26].

Half of the patients treated had proximal right coronary artery lesions, and STEMI was the indication for PCI in 55.3% of cases. The observed mortality rate was lower than that reported in the USA [27], South Africa [28], and Abidjan [29], but higher than that documented in Sri Lanka [26]. This discrepancy may be attributed to variations in healthcare systems, healthcare accessibility, and overall infrastructure in different regions [6].

In the present study, 7.14% of patients developed AKI, a rate that is slightly lower than that reported in Tanzania [30]. The male predominance observed in our study (83%) is consistent with studies conducted in Yemen (50) and Sri Lanka [26], although it is higher than findings from Romania (52) and New York [25]. The average age of the participants was 58 years, which is similar to studies conducted in Yemen [14], Tanzania [30], and Sri Lanka [26].

Chronic illnesses such as hypertension (56.7%) and diabetes mellitus (60.3%) were prevalent among the participants, mirroring findings from studies in Yemen [14] and Italy [31]. Ischemic heart disease was the most common cardio-

Table 3. Factors associated with outcomes of percutaneous Intervention

Serial Number	Variables	Category	COR (95% CI)	Sign	AOR (95% CI)	Sign
1	Sex					
		Male	0.159 (0.061, 0.417)	<0.001	0.095 (0.03, 0.34)	<0.001
		Female	1		1	
2	History of MI					
		No	1		1	
		Yes	5.15 (2.033, 14.96)	<0.001	10 (2.31, 13.31)	0.002
3	Types of Stents					
		Bare Metal	18.909 (1.108, 322.790)	0.018	5 (1.69, 10.29)	0.009
		Balloon	0.391 (0.021, 1.297)	0.735	0.831 (0.79, 3.48)	0.983
		Drug Eluting	1		1	

Note: Outcome variable: Death or Alive; significant at *P*-value <0.05, AOR: adjusted.

vascular condition identified (42.6%), followed by MI (13.4%), corroborating results from studies conducted in the USA [27] and South Korea [32].

The observed outcomes highlight the importance of understanding the clinical characteristics and complications of PCI. The relatively low rates of MI and major bleeding in our study suggest effective management protocols; however, the presence of AKI and the need for further interventions in some patients indicate areas for improvement in patient care and monitoring [33].

The outcomes of PCI in our study reflect both the efficacy of the intervention and demographic characteristics of the patient population. The observed 8.9% incidence of MI after PCI was comparable to that reported in similar studies, indicating a consistent pattern in patient outcomes across different healthcare settings. The lower rate of major bleeding (2.6%) suggests that procedural techniques and postoperative care protocols are effective in minimizing complications [34]. These outcomes underscore the importance of understanding the clinical characteristics and complications of PCI. The relatively low rates of MI and major bleeding suggest effective management protocols; however, the presence of AKI indicates areas for potential improvement in patient care and monitoring. The observed outcomes reflect both the efficacy of PCI and the demographic characteristics of the patient population. The incidence of 8.9% for MI post-PCI is comparable with that of similar studies, indicating consistent patterns across healthcare settings. The lower rate of major bleeding (2.6%) suggests effective procedural techniques and postoperative care protocols [35].

The significant proportion of patients presenting with STEMI highlights PCI's critical role in managing acute coronary syndromes. The lower mortality rate compared with the other regions may reflect differences in patient demographics, timing of intervention, and health infrastructure supporting cardiac care. The significant proportion of patients presenting with STEMI underscores the critical role of PCI in managing acute coronary syndromes. The lower mortality rate observed in our study than in other regions may reflect differences in patient demographics, the timing of intervention, and the overall health infrastructure available to support cardiac care [36].

Implications for future research

Given the findings of this study, future research should focus on the long-term outcomes of post-PCI patients, including the impact of chronic illnesses on recovery and the effectiveness of various stent types. In addition, exploring the reasons for the higher mortality rates in certain demographics could provide valuable insights for improving patient care strategies.

Conclusion

The findings of this study highlight that coronary artery stenosis (CAS) is more prevalent in older individuals and men, with a significant association between chronic illnesses, such as diabetes and hypertension, and the severity of coronary artery disease. PCI remains a vital

intervention for patients with severe arterial stenosis and STEMI, effectively restoring normal blood flow in most cases while maintaining a low mortality rate. Despite the predominance of male patients in our study, the risk of adverse outcomes was lower in male patients than in female patients.

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Verbal informed consent was obtained from all subjects before the study.

Disclosure of conflict of interest

None.

Abbreviations

ACS, Acute Coronary Syndrome; AKI, Acute Kidney Injury; CAD, Coronary Artery Disease; CVD, Cardiovascular Disease; MI, Myocardial Infarction; NSTEMI, Non-ST Elevation Myocardial Infarction; PCI, Percutaneous Coronary Intervention; STEMI, ST Segment Elevation Myocardial Infarction; TIMI, Thrombolysis in Myocardial Infarction.

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Supplementary Table 1. Previous medical history of participant's prior PCI procedure

SN	Variables	Frequency	Percentage (%)
1	History of myocardial infarction (MI)		
	Yes	30	13.4
	No	194	86.6
2	History of ischemic heart disease		
	Yes	94	42.0
	No	130	58.0
3	History of stroke		
	Yes	10	95.5
	No	214	4.5
4	History of peripheral vascular disease		
	Yes	4	1.8
	No	220	98.2
5	History of chronic renal failure		
	Yes	17	7.6
	No	207	92.4
6	History of valvular heart disease		
	Yes	8	3.6
	No	216	96.4
7	History of PCI		
	Yes	31	13.8
	No	193	86.2
8	Smoking		
	Never	197	87.9
	Former	22	9.8
	Current	5	2.2
9	Diabetes Mellitus (DM)		
	Non diabetic	89	39.7
	DM diet control	1	0.4
	DM oral medication	80	35.7
	DM insulin	36	16.1
	Newly DM	18	8.0
10	Hypertension		
	Yes	129	57.6
	No	95	42.4
11	Dyslipidaemia		
	Yes	63	28.2
	No	161	71.8

PCI: Percutaneous coronary intervention, HTN: Hypertension, DM: Diabetic Mellitus.

Supplementary Table 2. Clinical characteristics of the respondents during admission

Ser no	Variables	Frequency	Percentage
1	Presence of elevated biochemical marker		
	Troponin	180	84.9
	CK-MB	30	14.2
	Lipid profile	113	53.3
	Myoglobin	1	0.5
	CRP	11	5.2
	D-Dimmer	1	0.5
	Others*	55	25.9
2	Indication for PCI		
	STEMI	125	55.8
	NSTEMI	36	16.1
	Stable angina	53	23.7
	Unstable angina	10	4.5
3	PCI status		
	PPCI	70	31.3
	Urgent	41	18.3
	Elective	113	50.4
4	Homodynamic support		
	No	181	80.8
	Yes	43	19.2
5	Presenting complaints		
	Typical chest pain	181	80.8
	Atypical chest pain	40	17.9
	Dyspnoea/orthopnoea	107	47.8
	Palpitation	38	17
	Fatigue	204	91.1
	Syncope	4	1.8
	Sweating	13	5.8
	Gastritis	15	6.7
	Cough	9	4
	Vomiting	11	4.9
	Others**	15	6.7

*others: HgA1c, Creatine kinase (CK), low Hgb level. **others: nausea, dyspepsia, dizziness. CK-MB: Creatine Kinase-MB, CRP: C-reactive protein, PPCI: Primary percutaneous coronary intervention, STEMI: ST Elevation Myocardial infarction.

Supplementary Table 3. The type and coronary artery blocked and severity of stenosis

Ser no	Variables	Frequency	Percentage (%)
1	Right coronary artery (RCA)		
	Proximal right	45	20.1
	Mid right	45	20.1
	Distal right	21	9.4
	Right posterior descending	3	1.3
	Severity of stenosis in RCA		
	Mild (20-49)	7	6.2
	Moderate (50-69)	8	7.0
	Severe (70-99)	99	86.8
2	Left main coronary artery		
	Proximal left	75	33.5
	Mid left	93	41.5
	Distal left	8	3.6
	Severity of stenosis in LMCA		
	Mild	4	2.2
	Moderate	8	4.5
	Severe	162	82.1
	Total occlusion	1	0.6
3	Circumflex coronary artery		
	Left circumflex	21	9.4
	Proximal circumflex	23	10.3
	Mid circumflex	28	12.5
	Severity of Stenosis in circumflex artery		
	Mild	5	17.8
	Moderate	6	2.6
	Severe	52	27.8
4	Right posterolateral segment and branches		
	No	211	94.2
	Yes	13	5.8
	Severity of stenosis		
	Moderate	1	7.7
	Severe	9	69.3
5	Left main stem protected		
	No	207	92.4
	Yes	17	7.6
6	Types of lesions		
	Type A	144	64.3
	Type B	68	30.4
	Type C	12	5.4

Supplementary Table 4. Types of procedure for study participants

SN	Variables	Frequency	Percent (%)
1	Arterial access site		
	Femoral	224	100
2	Stent use		
	Yes	216	96.4
	No	8	3.6
3	Direct stenting		
	Yes	28	12.6
	No	195	87.4
4	Stent type		
	Bare metal	2	0.9
	Balloon coated	3	1.3
	Drug eluting	219	97.8
5	Stent number		
	One stent	140	62.5
	Two stents	69	30.8
	Three stents	15	6.7
6	Medication used		
	Aspirin	224	100
	Clopidogrel	222	99.1
	Vitamin K	8	3.6
	Oral anticoagulant	1	0.4
	Other	3	1.3
	Anticoagulant		

Supplementary Table 5. Peri procedural complications among study participants

Ser. no	Variables	Frequency	Percent (%)
1	Left ventricular apical thrombosis	15	6.7
2	No/slow flow phenomenon	13	5.8
3	DC cardio version	8	3.6
4	Cardiac arrest	3	1.3
5	Ventilated (intubated)	2	0.9
6	Tamponade	1	0.4

Supplementary Table 6. Medication received by participants during discharge

Ser no	Variables	Frequency	Percent (%)
1	Aspirin		
	No	4	1.8
	Yes	220	98.2
2	Other antiplatelet		
	No	2	0.9
	Clopidogrel	222	99.1
3	Anticoagulant		
	No	167	74.6
	Vitamin K	53	23.7
	Oral	1	0.4
	Other	3	1.3
4	Beta blocker		
	No	17	7.6
	Yes	207	92.4
5	ACE inhibitors		
	No	81	36.2
	Yes	143	63.8
6	Angiotensin		
	No	142	63.6
	Yes	82	36.6
7	Diabetic medication		
	Oral only	55	24.6
	Insulin only	26	11.6
	Insulin and oral	54	24.1
8	Statin		
	No	12	5.4
	Yes	212	94.5